UNCLASSIFIED

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Joint Interoperability Test Command

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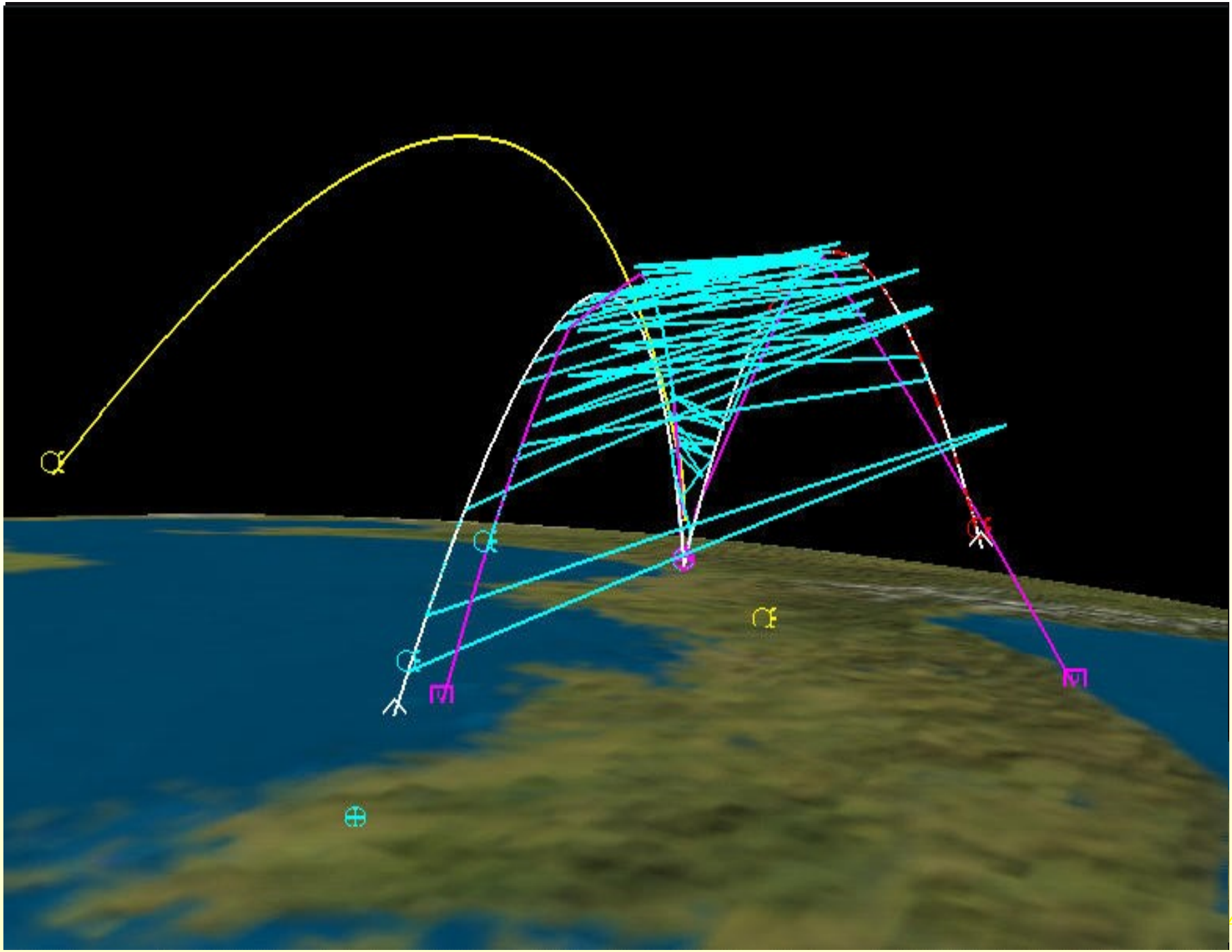
“It is better to know nothing than to know what ain't so.”

Josh Billings (1818 - 1885)

US writer



Interoperability

“. . . the ability to provide services to and accept services from other systems, units, or forces, *and to use those services to operate effectively together.”*

Joint Pub 1-02

12 April 2001

“Demonstrations are not enough.”

NR-KPP View of Interoperability

NEW

- **NCOW Reference Model**
- **Key Interface Profiles (KIPs)**
  - **Standard ways for DoD to interface**
- **Integrated Architectures**
  - **Defines info exchange in context of COIs**
- **Information Assurance**

OLD

- **N/A**
- **(Key) Interfaces**
  - **Defined on a system-by-system basis**
- **Information Exchange**
  - **Propensity to define info flow from system-centric view**
- **Information Assurance**

Potential NR-KPP Impacts: General

- More standardization in information collection, transmittal, processing, storage . . .
- Fewer unique processes
- Fewer unique systems
- Reduced impact of “N-squared” issue
- Increased importance of standards
- Increased importance of integrated architectures
- Increased potential for “flexible interoperability”

Potential NR-KPP Impacts: Testing

- **Increases emphasis on standards conformance testing**
- **Allows for net-centric testbed infrastructure**
- **Facilitates standardization of test methodologies**
- **Facilitates developing strong subject matter expertise**
- **Helps frame operational impacts (integrated architectures)**

Element Definition and Testing

NR-KPP Element	Status	T&E Issues	Resource Impact	Test Method
NCOW RM	Immature	Need definition; Testing infrastructure required.	****	TBD; Mix of stds compliance and interfaces to network.
KIPs	17 ID'd; 2 Developed	Definition of additional KIPs; ID/Development of test capabilities.	***	Primarily stds compliance with pt-to-pt checks.
Integrated Architectures	Immature	Key to capabilities definition and testing – but have been elusive; N-squared potential.	?	End-to-End testing via distributed testbeds, operational tests, and exercises.

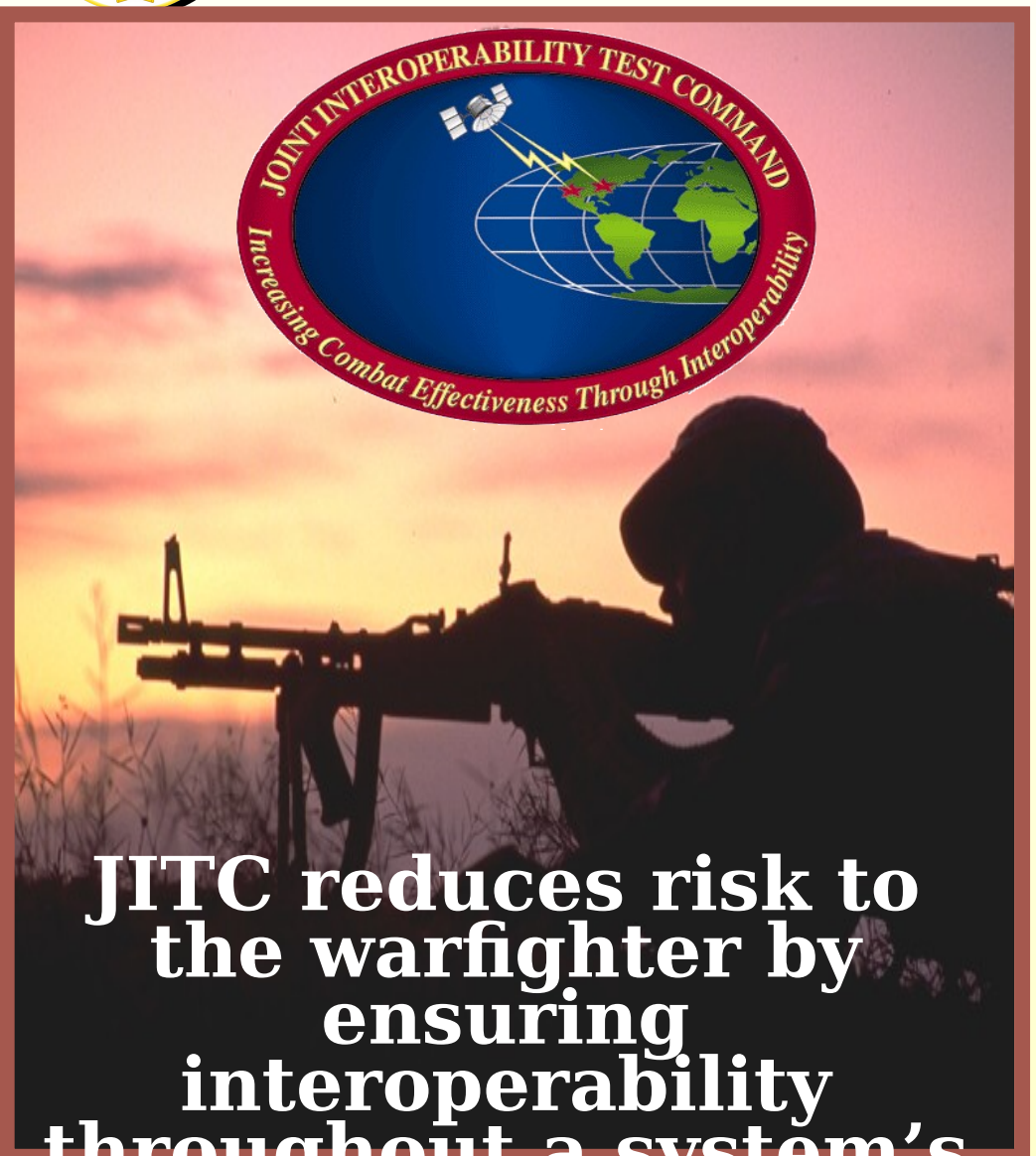
Conclusions

- **Net Centricity can help transform interoperability within DoD; NR-KPP is a first step.**
- **Testing dependent on further NR-KPP definition and application to specific case studies.**
- **Standards conformance/compliance testing increasingly important, but end-to-end testing within integrated architectures still a must.**
- **Interoperability will remain a complex and evolving entity – can't achieve it "once and for**

DEFENSE INFORMATION SYSTEMS AGENCY

BACK-UP SLIDES

JITC's Unique Roles



JITC reduces risk to the warfighter by ensuring interoperability throughout a system's

DOD's sole joint interoperability certifier

Operational Test Agency for many DOD elements

Major Range & Test Facility Base (MRTFB)

Executive Agent for testing (e.g., NIMA and NSA)

Joint Interoperability Directives & Instructions

DODD 4630.5

IT and NSS interoperability and supportability is essential.

DODD 5105.19

DISA shall ensure end-to-end interoperability.

CJCSI 6212.01B

All NSS and IT, regardless of ACAT, must be tested and ... certified by JITC.

DOD 4630/5000

Interoperability is the ability to provide and accept data, information, materiel, and services ... and ... includes both the technical exchange of information and the end-to-end operational effectiveness of that exchange, as required for miss[illegible]ent.

DODI 4630.8

All systems must be tested for interoperability before fielding ... and certified by JITC ... throughout a systems life.

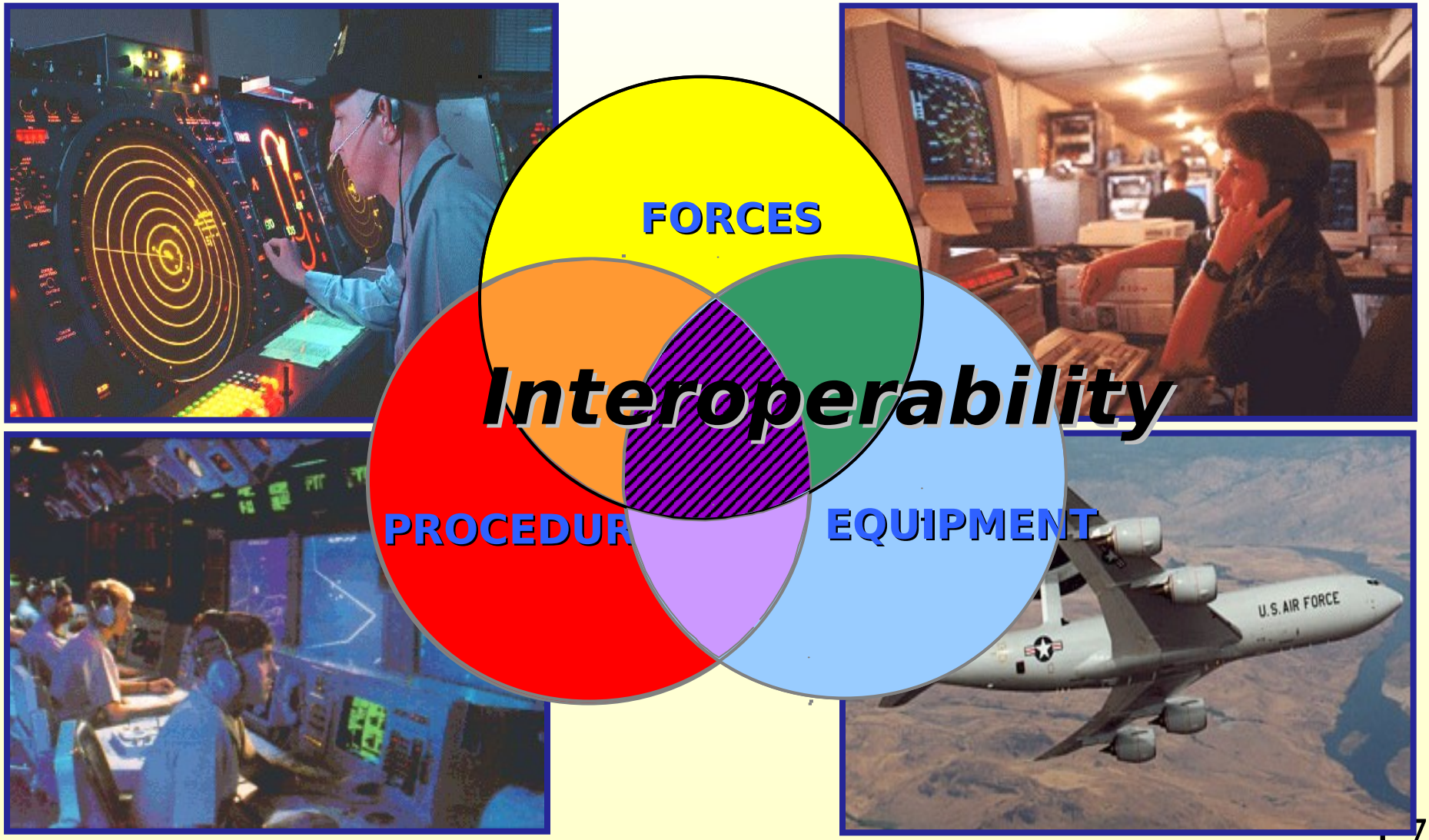
CJCSI 3170.01C

Mandates interoperability KPP for CDDs & CPDs

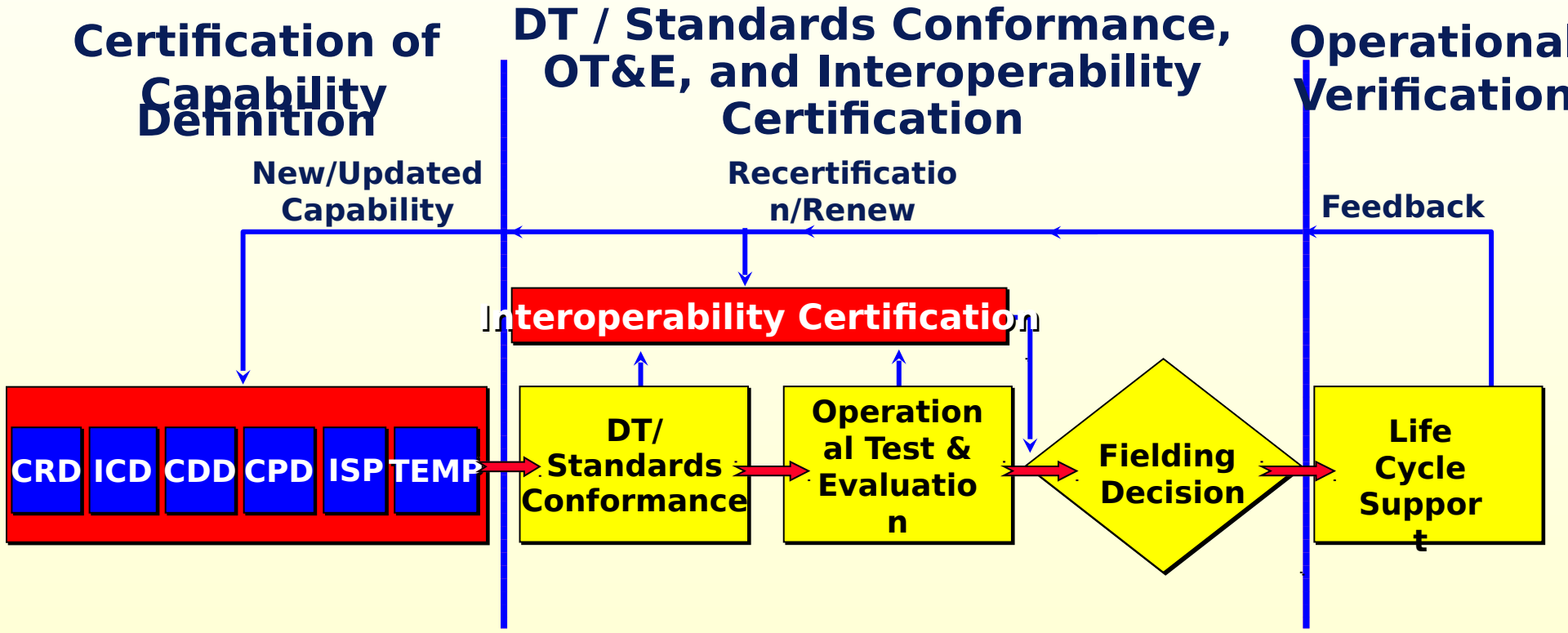
DOD 5000 series

For IT systems, including NSS, ... JITC shall provide system interoperability test certification memoranda ... throughout the system life-cycle and regardless of ACAT.

JITC's Interoperability Perspective



Certification and the System Life-Cycle

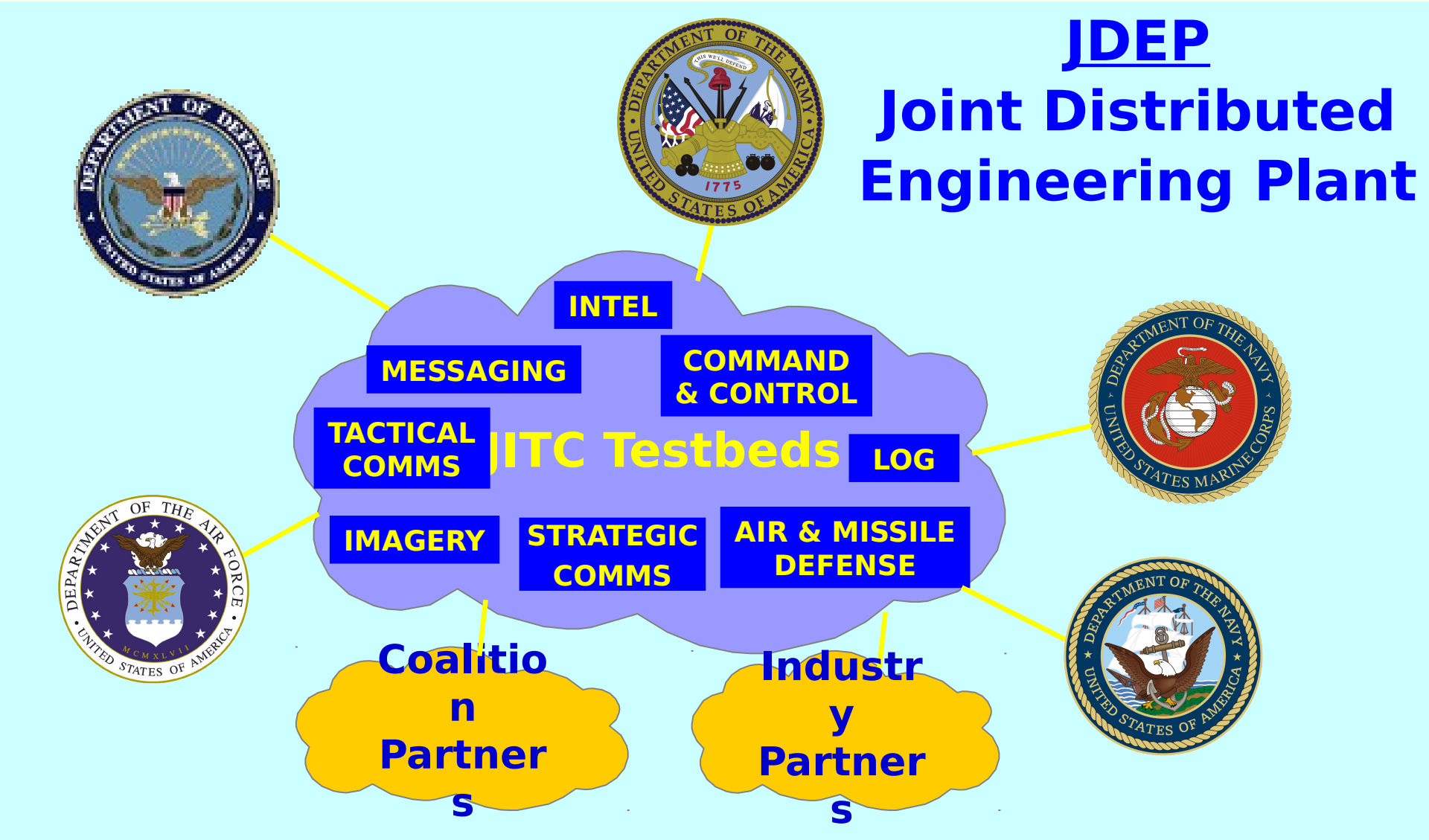


"…future capabilities must be born joint."
Admiral E. P. Giambastiani, Commander, US Joint Forces Command

JITC's Areas of Expertise

- Asynchronous Transfer Mode (ATM)
- Combined Interoperability
- Command and Control (C2)
- Defense Information System Network (DISN)
- Defense Message System (DMS)
- Defense Red Switch Network (DRSN)
- Department of Defense Intelligence Information System (DODIIS)
- DFAS Corporate Information Infrastructure (DCII)
- Electronic Business / Electronic Commerce (EB / EC)
- Global Command and Control System (GCCS)
- Global Combat Support System (GCSS)
- High Frequency Test Facility (HFTF)
- Information Assurance (IA)
- Joint Tactical Radio System (JTRS)
- Joint Theater Air & Missile Defense (JTAMD)
- Key Management Infrastructure (PKI, PKE, GDS and EKMS)
- National Imagery Transmission Format Standard (NITFS)
- Missile Defense (MD)
- Optical Switching
- Satellite Communications
- Tactical Communications
- Tactical Digital Information Link (TADIL)
- Telemedicine
- US Message Text Format (USMTF)
- Unmanned Aerial Vehicle (UAV)

Systems of Systems Testing



Demos and Exercises

Joint Warrior Interoperability Demonstration (JWID)

- Coalition interoperability
  - Multiple Security Levels
  - Logistics Systems
  - Language Translators
  - Situational Awareness
  - Network Vulnerability
  - Network Management
- Technical Interop Assessment
- Warfighter Utility Assessment

Distributed Interoperability Communications Exercise (DICE)

- Joint interoperability
  - Voice Switches
  - Data Systems
  - Messaging Systems
  - Transmission Systems
  - Video Teleconference
- Operational units in doctrinally deployed joint network
- Comms training in a JTF environment

Contingency and Exercise Support

7/ 365 Hotline Support: 1-800-LET JITC (1-800-538-54

Conclusions

- **Interoperability is vital enabler of combat effectiveness.**
- **Interoperability of systems of systems will remain a complex and evolving entity – can't achieve it "once and for all."**
- **Accomplishments will require extensive partnering and resource sharing for engineering and disciplined testing.**
- **JITC is already a partner, and determined to be more so with key**
  - **distributed infrastructure,**

JITC Provides
Unparalleled Information Technology Support

The BATTLE GROUND
should not be the TESTING GROUND